

Application No. 10/775,519
Response and Amendment dated March 29, 2006
Reply to Advisory Action of January 20, 2006
Docket Number 18525/04071

AMENDMENTS TO THE CLAIMS

Listing of the Claims:

1. (currently amended): A system for draining fluid from a layered soil profile having a sandy root zone layer above a gravel layer, comprising:

~~(a) a layered soil profile comprising at least a first layer and a second layer beneath said first layer, wherein the material of said first layer is different from the material of said second layer;~~

~~—— (b) means for determining the particle sizes of the materials comprising said layers;~~

~~—— (c) means for determining the fluid retention properties of said layers based on said particle size;~~

~~—— (d) a plurality of elongated porous drainage members, wherein each of said drainage members further comprises individual drainage member comprising a length of fiberglass having a distribution of pore sizes compatible with said predetermined particle sizes and said fluid retention properties of the layered soil profile;~~

~~—— (e) means for inserting said the plurality of drainage members positioned into said the layered soil profile at substantially regular intervals to form forming an array; and~~

~~—— (f) wherein, each of said the drainage members extending from said first the root zone layer substantially through said second the gravel layer and to provide a substantially continuous porous pathway for draining said fluid from said the layered soil profile.~~

2. (cancelled)

3. (currently amended): The system of claim 1, wherein the orientation of ~~said the~~ drainage members within said soil profile is substantially vertical.

4. (currently amended): The system of claim 1, wherein each length of fiberglass further comprises at least one of fiberglass rope and fiberglass tape.

5. (currently amended): The system of claim 4, wherein ~~said the~~ length of fiberglass has a diameter of about 0.64 to 2.54 cm.

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6. (currently amended): The system of claim 1, wherein said the fluid to be drained is perched water retained in one or more layers of said layered soil profile.

Claims 7-11 (cancelled)

Claims 12-20 (cancelled)

21. (cancelled)

22. (previously presented): The system of claim 1, wherein the drainage members are spaced about 24 inches (61 cm) from one another.

23. (new): The system of claim 1, wherein one or more of the individual drainage members are inserted into the layered soil profile through pilot holes formed by driving one or more tines into the soil using a mechanical actuator.

24. (new): The system of claim 23, wherein the mechanical actuator is a hydraulic ram.

25. (new): The system of claim 23, wherein fiberglass rope drainage members are inserted into the pilot holes using a mechanical actuator.

26. (new): The system of claim 25, wherein insertion of the fiberglass rope drainage members into the pilot holes is facilitated by using a stiffening support means.

27. (new): The system of claim 26, wherein the stiffening support means is selected from one or more of a small diameter wire, a plastic dowel, and a wooden dowel affixed along the axis of the fiberglass rope.

28. (new): The system of claim 1, wherein fiberglass tape drainage members are inserted into the soil using a thin, reinforced metal plate.

29. (new): The system of claim 28, wherein the fiberglass tape drainage members are reversibly affixed to the reinforced metal plate and the assembly is driven into the soil using a mechanical actuator.

30. (new): A system for draining fluid from a layered soil profile having a sandy root zone layer above a gravel layer, comprising:

a plurality of elongated porous drainage members, each individual drainage member comprising a length of fiberglass rope or tape having a diameter of about 0.64 to 2.54 cm, and a distribution

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of pore sizes compatible with predetermined particle sizes and fluid retention properties of the layered soil profile, the plurality of drainage members positioned and spaced apart from one another in the layered soil profile at substantially regular intervals of about 24 inches (61 cm), whereby each of the drainage members extends from the root zone layer substantially through the gravel layer to provide a substantially continuous porous pathway for draining fluid from the layered soil profile.

31. (new): A system according to claim 30, wherein drainage members comprising fiberglass rope are inserted into the layered soil profile using a mechanical actuator through pilot holes formed by driving one or more tines into the soil using a mechanical actuator and wherein drainage members comprising fiberglass tape are inserted into the soil using a thin, reinforced metal plate

32. (new): A system for draining fluid from a horizontally layered soil profile having a sandy root zone layer above a gravel layer, comprising:

a plurality of elongated porous drainage members positioned and spaced apart from one another at substantially regular intervals, each individual drainage member comprising a length of wetable fibrous material having sufficient structural integrity to resist free fluid flow and a distribution of capillary pore sizes compatible with predetermined particle sizes and fluid retention properties of the layered soil profile, each of the drainage members extending from the root zone layer substantially through the gravel layer to provide a substantially continuous porous pathway for draining fluid from the layered soil profile.

33. (new) A system according to claim 32 wherein the wetable fibrous material is selected from fiberglass rope and fiberglass tape.

34. (new) A system according to claim 32 wherein each individual drainage member has a diameter of about 0.64 to 2.54 cm.

35. (new) A system according to claim 32 wherein the plurality of drainage members positioned and spaced apart from one another in the layered soil profile at substantially regular intervals of about 24 inches (61 cm).

36. (new): A system of claim 33, wherein drainage members comprising fiberglass rope are inserted into the layered soil profile using a mechanical actuator through pilot holes formed by

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driving one or more tines into the soil using a mechanical actuator and wherein drainage members comprising fiberglass tape are inserted into the soil using a thin, reinforced metal plate.